



## MEMORANDUM

16600

13 May 10

From: J. E. Hanzalik CAPT  
CGD EIGHT (drm)

Reply to Mr. Bill Goetzee, USCG  
Attn of: 504-671-2234

To: RRT VI CONSENSUS NETWORK PARTICIPANTS

Subj: RRT CALL TO DISCUSS PROPOSAL FOR CRITERIA AND CONSENSUS TO  
RESUME A PROPOSED 3-5 DAY OPERATION TRIAL OF SUB SEA DISP

1. A request for an 11<sup>th</sup> overall Incident Specific convening of the RRT VI consensus trustees was made on behalf of RADM Mary Landry, the USCG FOSC for the on-going oil spill associated with the TRANS-OCEAN DEEP WATER HORIZON) incident that began on 20 APR 2010, where a Mobile Off-Shore Drilling Unit (MODU) located approximately 45-miles SE of Venice, Louisiana in the Gulf of Mexico suffered an uncontrolled blow-out, explosion, loss of life, and subsequent sinking of the MODU. The purpose of the Incident Specific Convening of the RRT VI trustee agencies was to discuss issues and criteria that would be necessary to gain consensus to implement a third operational trial of the sub-sea injection of dispersants with the possibility to continue the process operationally given the attainment of specifically agreed upon criteria for monitoring, positive indications of efficacy and net environmental benefit, as well as established shut-down thresholds. The following trustees, RRT VI member agency representatives, consensus network participants, were present on the Incident Specific Telephone Conference that began at 1700L Central Time, Friday 13 May 2010, but not limited to the following list:

CAPT James Hanzalik, USCG (Region VI Co-Chair)  
Mr. Craig Carroll, EPA – Region VI Alternate Co-Chair  
Mr. Ronnie Crossland, EPA  
Mr. Steve Mason, EPA – RRT VI Coordinator  
Dr. Stephen Spencer; DOI Region VI (Designated Primary Trustee Rep)  
Ms. Karolien Debuschere, Louisiana Oil Spill Coordinator Office (LOSCO)  
Mr. Bill Goetzee, USCG, RRT VI Coordinator

2. Mr. Goetzee of USCG and Craig Carroll of EPA addressed the RRT participants with respect to the issues associated with a proposed conditional operational continuation of sub-sea dispersants (3-5 days nominal) with option to continue provided that monitoring as part of an overall Adaptive Management Strategy which shall include at a minimum: monitoring and sampling at “depth”, discrete periods of data evaluation and reporting, and verification of research vessel availability (with the full required suite of testing capability required to be verified prior to any commencement of a stated “conditional” sub-sea dispersants).

3. EPA mentioned that they briefed their position up and down their chain, and submitted the following criteria to the RRT as conditions required to be met prior to an approval to continue:

**Action Items from Administrator for Test 3 Subsurface Dispersant Application**

- 1) Subsurface application of dispersant will likely be authorized on a conditional basis by the Administrator, we will wait to see data from LSU, but this process needs to be expedited, and data must be seen and evaluated ASAP.
- 2) EPA will develop added requirements (see below) to be appended to the directive, but this will not hold up further application of the dispersant subsurface.
- 3) EPA scientists must be allowed flexibility within the sampling plan to direct the collection of additional data based on field observations (at times and locations of their choice). For example, EPA may request to recast the station if the CDOM fluorometer indicates a large increase in signal after data review. EPA staff must be allowed to be in constant communication with EPA staff on shore.
- 4) Sampling of dispersant/oil impacted waters must be continued per the directives, and in addition, baseline data of waters without direct application of dispersant will also be collected as part of data gathering process, when the dispersant is not being applied or when the ship is traveling back and forth from the port to the site.

**Additional Data Collection Requirements (DRAFT)**

Collect in waters impacted by (i) oil only, (ii) dispersant/oil, and (iii) neither.

- (1) Use Turner Designs C3 fluorometer (e.g. SMART protocol) to distinguish between oil impacted surface waters and those not impacted by oil.
- (2) Deploy LISST from the vessel for continuous sampling of surface waters during transits. LISST provides particle size counts information which potentially distinguishes between dispersed and non-dispersed oil.
- (3) Deploy CTD rosette package equipped with fluorometer to bottom depth and collect discrete samples in the water column. Identify the location (horizontal and vertical) of the subsurface, rising, non-chemically dispersed oil plume within the water column. These measurements serve to validate plume trajectory models.
- (4) Discrete water samples shall be taken at predetermined depths for UV fluorescence for baseline measurements of dispersed oil without chemical dispersants.

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4. DOC represented by NOAA summarized their initial input verbally regarding the proposed sub-sea operational trial, and provided verbal commentary which was later followed up by the following written statement reference as Encl (1) provided via e-mail on May 14, 2010, to more accurately denote their official position and concerns toward a third trial of the sub-sea dispersant method:

“Regional Response Team 6 (RRT6) is requesting concurrence from NOAA to provide the Federal On-Scene Coordinator (USCG) a recommendation as to a decision to use a sea floor application of dispersants to assist in mitigating the continuous release of oil from the Deepwater Horizon incident. The amount of Corexit 9500 dispersant to be applied to the sea floor is estimated at 14,400 gallons per day based on 10 gallons/minute.

A written plan from the Unified Command as to the path forward has not been submitted to RRT6 as this is written, but is expected soon. It is expected to contain specific review points for continued use if approved. This email provides information that may be useful in the discussion. I have sent this to the key RRT6 members and many of NOAA's key staff in the region. It is up to each of the represented agency officials to determine who should also have this information. I would appreciate any and all comments as the discussion continues.

NOAA wants to make sure that our concerns about possible impacts of oil and dispersants on the surface waters, water column, and sea floor flora and fauna (including eggs and larvae) have been registered. The proposed actions are not without potential and substantive risks. They are unknowns to the overall trade-off discussion, and these have been articulated in this memo and attached draft assessments. NOAA requires that steps will be taken to do the monitoring needed to evaluate environmental impacts of the dispersants and dispersed oil so we can better understand the threat in the short term before committing to the long term use of this technique. Monitoring must extend from the sea surface to the sea floor (some 5000 feet in depth). NOAA recognizes that such a major spill require tough choices. No options are good ones with the exception of stopping the flow of oil. NOAA recommends that sea floor dispersant use be managed such that monitoring and review of the data would lead to an overall consensus of stakeholder support for any long-term use of this option.

During the discussion and initial testing phase of the sea floor dispersant technique (injection of dispersant directly into and at the riser), the Environmental Unit developed a strategy to assess associated trade-offs. The assessment process included identification of the receptors (habitats and species potentially affected), expected transport and fate of dispersed and undispersed oil, and a monitoring plan that included possible decision criteria for reconsidering (and stopping) the use of dispersants at the sea floor. This mitigation option doesn't stop the flow oil, but may alter the nature of the oil such that there is a shift in which resources are impacted. Any benefit must be viewed in context of a trade-off analysis. The goal is to reduce the overall environmental impact to resources of greatest concern to NOAA and the public that we serve.

What do we know? We know that there is a major oil spill with an estimated 5000 bbl per day release at the sea floor. The oil at the ocean surface is a threat to several NOAA protected species such as Sperm Whales and Sea Turtles. This same oil is a threat to coastal fisheries, shorelines, and important nursery grounds near-shore including the estuarine and marsh habitats of the Louisiana coast as well as most of the northern Gulf of Mexico (the shorelines of Texas, Louisiana, Mississippi, Alabama, and Florida). In the response effort, large quantities of dispersant (more than 400,000 gallons have been applied to date) are being used to mitigate the spill at the surface with success estimated as effective to marginally effective (the nature of the release and oil weathering have had an impact on dispersant effectiveness). We also know that the deepwater environment is not oil free. MMS estimates that natural oil seeps discharge up to 40 million gallons of oil a year into the Gulf of Mexico and there are deepwater communities that actually use methane and oil seeps (chemosynthetic systems) as the foundation of their food web.

What we don't know. We don't fully know the mixing efficiency of the dispersant and oil at the release (we know that there is contact and mixing, but do not know if the overall effectiveness. Visual observations from the last test indicated an appreciable at the water surface. We don't fully know the overall additional risk to the deepwater communities. We have collected information as to what species and communities may be present in the deepwater, but the overall densities and populations of these resources is not nearly as well studied (and as well known) as the surface water and coastal habitats. While some of the deepwater communities may be at a lower risk because they are adapted to an actual food web sourced from hydrocarbons such as methane vents, others may not be as tolerant. We don't fully understand the transport and fate of any oil dispersed at the sea floor (the oil will degrade, but at what rate and how far would the dispersed oil move is difficult to fully asses with the limited information that exist). We don't fully understand the plume transport as the modeling varies based on assumptions as to movement. We don't fully know if the dispersant treatment would result in a significant change in oxygen demand that might result in a low-oxygen or hypoxia condition somewhat like the hypoxic condition in the Gulf of Mexico off the Mississippi River. The deep ocean is largely unknown when contrasted with our knowledge of near surface waters and coastal waters.

During the trade-off discussions, it was clear that an assessment or monitoring component would be required for any approval and that the path forward must be managed in an adaptive way. Information from the field sampling as well as additional modeling and habitat information generated would be reevaluated in context to the overall risk and threats of the oil spill. The monitoring plan would include measurement of oxygen concentration, detectable hydrocarbons, a rapid toxicity screening method (proposed), and collection of additional water samples for laboratory analysis. The primary concerns identified by the Environmental Unit (which includes active participation by NOAA) related to extended use of the sea floor technique over extended periods. If the pollution domes mitigate a large percentage of the spill oil, the duration of sea floor dispersant use would be measured in a couple of weeks. If the pollution dome fails (and other intervention plans fail), the duration of the spill may last another 3 months. It is the long

term use of this option that is difficult to assess with limited data; therefore, there is a need for monitoring and reassessment.

The only response solution that would stop additional environmental impact is to stop the release of oil. The use of dispersants has always been a trade-off as to the lesser of overall negative environmental effects. If the sea floor dispersant technique would reduce the impacts to the overall surface waters, near-shore waters, and estuarine habitats (as well as the animals that utilize these important resources) there is merit for considering for its use. Should the technique reduce the overall dispersant application use with as much or greater overall effectiveness, this would also have merit in balancing the trade-off discussion. Should, during the monitoring and assessment, the apparent persistence of any subsurface dispersed oil plume generate a toxicity or oxygen depletion concerns greater than the net benefit for reduced surface and coastal impact, the decision could be reevaluated and sea floor dispersant application halted. The sampling and monitoring data, an observed effectiveness in reducing the surface oil threat, and continued investigations as to resources at risk and transport and fate concerns are all elements of the Adaptive Management process proposed. In addition, additional assessments as to the possible impacts would also be conducted as part of the Natural Resource Damage Assessment process.

This brief report provides an outline of where the thought process currently stands. It is expected that a report on the limited initial sampling will be provided by the Unified Command recognizing that there were limitations that must be overcome in future sampling and monitoring efforts. The oil, unfortunately, continues to spill from the sea floor. The only solution to stop additional environmental impact is to stop the flow of oil. The proposed technique would not eliminate the flow of oil or oil pollution, but would alter the transport and movement of a large fraction of that oil. Attached are two documents that provide some initial assessment information on the deep water environment and the possible transport based on modeling. In both, the uncertainty identified is the cause to proceed with caution using monitoring and an adaptive management posture with wide stakeholder involvement. While the information provided in this write up reflects what is known and unknown, it has not been vetted through a detailed review process... such a process will be an on-going expectation of the path forward.”

Charlie Henry

NOAA Natural Resource Trustee/RRT6 representative

5. DOI stated that there must be data for any Adaptive Management Strategy to take place, again emphasizing the lack of data to date. Trust must be gained by not failing to provide data if we get to the point of an operational test again, and for reasons other than vessel failures, if the logistics were not complete enough to capture the requirements on the third trial. NOAA also agreed that data at depth is a “must” for any continuation decision. USCG commits to identifying that data collection logistics would be confirmed prior to R/V vessel departure. It is understood by all trustees that vessel O/S time and logistics of shuttling samples back and forth for analysis would take some time for data reporting to “catch up” but general consensus is that that would be acceptable provided that the initial guarantee of required data collection and equipment is

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ensured, and that discrete intervals for data reporting and evaluation be scheduled into the process are met. It would be an unacceptable failure of trust, if a third trial was approved, and logistics for data collection were not ensured. Criteria factors for the ship would be to have an EPA rep O/S to ensure the ship had the required capability, as well as communications for some real time reporting and coordination. EPA will provide a co-lead scientist for the overall event.

6. State of Louisiana was allowed to present their position: The lack of reported data to date, and the need for data at depth was an agreed upon co-requisite. State consensus was reported to be established at a level above that of the LOSCO rep participating. EPA & USCG would work with unified command to push all required material up the chain for higher level approval in state of Louisiana. LA rep reported that the higher level review of the new criteria as well as proposal for a 3-5 day third trail period with discrete intervals impose for data evaluation and reporting would likely take several hours of a following business day (Friday 14 May) as a minimum expectation to meet with a requested consensus decision or reply of non-consensus by the state.

7. Despite a desired outcome to move forward with this third operational trial, the realities now imposed on gaining state of Louisiana consensus were tenuously left as allowing for the majority of Friday 14 MAY as a minimum expectation for all high-level review to take place with the possibility of a turn-around reply by close of business Friday May 14, 2010. Additionally, the consensus trustees DOI and DOC although not providing an explicit level of consensus, provided a cautious optimism leaning toward the benefits of a third trial, provided that data capture and reporting is an "absolute must" in the process. There was also a general "tacit level" consensus that in order to obtain further data to determine efficacy of the procedure, another trial would be necessary. The NOAA official position is most accurately captured in paragraph (4) above, as well as Enclosure (1) attached. A draft NOAA paper summarizing considerations regarding the use of deep water dispersion as a mitigation strategy is also provided to trustee agencies as a post-meeting attachment to this memo: Enclosure (2). A NOAA report summarizing the Subsurface Dispersed Oil Modeling in Support of Subsurface Dispersant Application as prepared by NOAA on May 13, 2010, is attached as Enclosure (3). A report summary of preliminary vessel data collection as submitted by US EPA National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL is attached as Enclosure (4).

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Encl (1) Initial NOAA SSC input via e-mail dated May 14, 2010, verbally presented 13 May  
Encl (2) Deep Water Dispersion as a Mitigation Strategy: DRAFT 1.4 May 13, 2010.  
Encl (3) Deep Water Horizon Incident: Subsurface Dispersed Oil Modeling in Support of  
Subsurface Dispersant Application prepared by NOAA: May 13, 2010  
Encl (4) R/V Brooks McCall Cruise Report Executive Summary prepared by EPA.